

CLAIMS

WHAT IS CLAIMED IS:

1. A method comprising:  
building a trace comprising instructions;  
5 building a trace block comprising said  
instructions;  
scheduling said instructions within said trace  
block disregarding data dependencies from any off trace  
basic blocks, wherein at least one of said instructions  
10 is moved during said scheduling; and  
correcting errors due to said at least one of said  
instructions being moved.
2. The method of Claim 1 wherein said trace  
15 comprises basic blocks comprising said instructions.
3. The method of Claim 2 wherein said building a  
trace block comprises:  
adding join instructions associated with said  
20 basic blocks to said trace block;  
appending said instructions into said trace block;  
and  
mapping said instructions to said join  
instructions.
- 25 4. The method of Claim 3 wherein said correcting  
errors comprises remapping said instructions to said  
join instructions after said scheduling.
- 30 5. The method of Claim 4 wherein said correcting  
errors further comprises determining whether said  
instructions are mapped to the same join instructions  
of said join instructions after said scheduling as  
before said scheduling.

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6. The method of Claim 1 wherein said correcting errors comprises renaming registers of said instructions.

5        7. The method of Claim 6 further comprising moving values from registers having new names to registers having old names.

8. The method of Claim 1 wherein said correcting  
10 errors comprises adding compensation code.

9. A method comprising:  
building a trace comprising a first basic block  
and a second basic block, said first basic block  
15 comprising a first instruction, said second basic block  
comprising a second instruction;  
building a trace block comprising said first  
instruction and said second instruction;  
scheduling said first instruction and said second  
20 instruction within said trace block disregarding data  
dependencies from off trace basic blocks, wherein said  
second instruction is moved from said second basic  
block to said first basic block during said scheduling;  
and  
25 correcting errors due to said second instruction  
being moved.

10. The method of Claim 9 wherein said correcting errors comprises renaming a register of said second  
30 instruction.

11. The method of Claim 10 wherein said register  
is renamed from an old name to a new name during said  
renaming.  
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12. The method the Claim 11 wherein said  
correcting errors comprises inserting a move  
instruction into said second basic block to move a  
value in a register having said new name into a  
5 register having said old name.

13. The method of Claim 9 further comprising  
building a control flow graph comprising said trace,  
said control flow graph further comprising an off trace  
10 basic block having an edge coming into said second  
basic block.

14. The method of Claim 13 wherein said  
correcting errors comprises adding a compensation basic  
15 block between said off trace basic block and said  
second basic block.

15. The method of Claim 14 further comprising  
inserting a copy of said second instruction after said  
20 renaming into said compensation basic block.

16. A system comprising:  
a processor; and  
a memory having a method of scheduling  
25 instructions using a trace scheduler stored therein,  
wherein upon execution of said method, said method  
comprises:  
building a trace comprising said instructions;  
building a trace block comprising said  
30 instructions;  
scheduling said instructions within said trace  
block disregarding data dependencies from any off trace  
basic blocks, wherein at least one of said instructions  
is moved during said scheduling; and  
35 correcting errors due to said at least one of said  
instructions being moved.

17. The system of Claim 16 wherein said trace comprises basic blocks comprising said instructions.

5        18. The system of Claim 17 wherein said building a trace block comprises:  
         adding join instructions associated with said basic blocks to said trace block;  
         appending said instructions into said trace block;  
10    and  
         mapping said instructions to said join instructions.

15       19. The system of Claim 18 wherein said correcting errors comprises remapping said instructions to said join instructions after said scheduling.

20       20. The system of Claim 19 wherein said correcting errors further comprises determining whether said instructions are mapped to the same join instructions of said join instructions after said scheduling as before said scheduling.

25       21. The system of Claim 16 wherein said correcting errors comprises renaming registers of said instructions.

30       22. The system of Claim 21 further comprising moving values from registers having new names to registers having old names.

         23. The system of Claim 16 wherein said correcting errors comprises adding compensation code.

35       24. A computer system comprising:

means for building a trace comprising instructions;

means for building a trace block comprising said instructions;

5 means for scheduling said instructions within said trace block disregarding data dependencies from any off trace basic blocks, wherein at least one of said instructions is moved during said scheduling; and

10 means for correcting errors due to said at least one of said instructions being moved.

25. A computer program product having a method of scheduling instructions using a trace scheduler stored therein, wherein upon execution of said method, said  
15 method comprises:

building a trace comprising said instructions;

building a trace block comprising said instructions;

20 scheduling said instructions within said trace block disregarding data dependencies from any off trace basic blocks, wherein at least one of said instructions is moved during said scheduling; and

correcting errors due to said at least one of said instructions being moved.

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26. The computer program product of Claim 25 wherein said trace comprises basic blocks comprising said instructions.

30 27. The computer program product of Claim 26 wherein said building a trace block comprises:

adding join instructions associated with said basic blocks to said trace block;

35 appending said instructions into said trace block; and

mapping said instructions to said join  
instructions.

28. The computer program product of Claim 27  
5 wherein said correcting errors comprises remapping said  
instructions to said join instructions after said  
scheduling.

29. The computer program product of Claim 28  
10 wherein said correcting errors further comprises  
determining whether said instructions are mapped to the  
same join instructions of said join instructions after  
said scheduling as before said scheduling.

30. The computer program product of Claim 25  
15 wherein said correcting errors comprises renaming  
registers of said instructions.

31. The computer program product of Claim 30  
20 further comprising moving values from registers having  
new names to registers having old names.

32. The computer program product of Claim 25  
wherein said correcting errors comprises adding  
25 compensation code.